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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,292	11/17/2000	Takatoshi Yamanaka	1080.1084 (JDH)	4924

21171 7590 09/27/2005

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EXAMINER

EDWARDS, PATRICK L

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/714,292

Applicant(s)

YAMANAKA ET AL.

Examiner

Patrick L. Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. The response received on 29 June 2005 has been placed in the file and was considered by the examiner. An action on the merits follows.

Response to Arguments

2. The arguments filed on 29 June 2005 have been fully considered. A response to these arguments is provided below.

35 USC 112, Second Paragraph Rejections

Summary of Argument:

Applicant has amended the independent claims to correct the previous 112(2) rejections.

Examiner's Response:

The previous rejections are hereby withdrawn.

Prior Art Rejections

Summary of Argument:

Applicant alleges that the examiner's reasons for not allowing the application have not been made clear, and opines that the examiner "feels that there is some sort of inherent correspondence between the image processing condition and the photography device and target/photography conditions." To address this alleged interpretation, applicant amended the claim to recite "conditions that correspond respectively to various photography devices and targets."

Examiner's Response:

Applicant's arguments have been fully considered but are unpersuasive. Applicant has ostensibly amended the claims to avoid a previously stated interpretation. However, applicant's amendment merely restates this interpretation.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. Claims 1-3 and 5-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogura et al. (U.S. Patent No. 6,502,984 B2).

With regard to claim 1, Ogura discloses a data obtaining section to obtain the radiation image (see Figure 29: The reference describes that elements 70-72 are used to obtain a radiation image of an object S).

Ogura further discloses a data obtaining section to identify the photography device used to obtain the radiation image (see Figure 29 in conjunction with supporting disclosure: The reference describes a position corresponding means, 74, that takes inputs from both the visible image photographing means, 72, and the radiographic image photographing means, 71. In order to correspond the positions of these two images, the position corresponding means inherently identifies the photography device used to obtain the radiation image (see further col. 16 lines 22-40: This passage further shows that the means, 74, must know which image came from where in order to perform the operation. The inherency of this operation is evidenced by the fact that distortion correction is often performed on the visible image before the corresponding operation takes place. In order to perform this distortion correction operation on the visible image, you have to be able to identify the photography device used to obtain the radiation image to eliminate the possibility of performing distortion correction on that image.).

Ogura further discloses a data obtaining section to identify the target from where the radiation image was obtained (see Fig. 29 in conjunction with supporting disclosure: a position corresponding means coordinates positions of the visible image and the radiographic image. Inherent in the operation of coordinating positions, is the operation of identifying positions (i.e. identifying "the target from where the radiation image was obtained").).

Ogura further discloses an image processing condition storing section to store image processing conditions that correspond respectively to various photography devices and targets(see Figure 29 in conjunction with supporting disclosure: The reference describes storing different image processes for different regions of the image (i.e. various targets). This is explained at col. 16 lines 42-59. The reference further describes that some image processing conditions correspond to one photography device (see col. 15 lines 49-54) while others correspond to another photography device (see col. 16 line 60 – col. 17 line 8).).

Ogura further discloses an image processing section to read from said image processing condition storing section the image processing condition that corresponds to the photography device used to obtain the radiation image and the target from where the radiation image was obtained, and to subject the radiation image obtained by said data obtaining section to the image processing in accordance with the image processing condition read by the image processing section (see Figure 29 element 73 in conjunction with col. 15 lines 49-53).

Regarding claims 2, 14, and 15, the conditions discussed in claim 1 above are "conditions used to obtain the medical image" as is required by the claim. For example, the size of the irradiation field discussed in col. 16 is a condition used to obtain the medical image.

With regard to claim 3, Ogura et al. discloses that the image processing section subjects the medical image obtained by said data obtaining section to at least a gradation conversion processing and a frequency emphasis processing (see column 15, lines 49-54: The reference describes that the image process means 73 subjects the image

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to processing including gradation correction and frequency emphasis.), and said image processing condition storing section stores a frequency emphasis function indicating a degree of frequency emphasis in which a gradation conversion function and an average density around respective points of the medical image are used as variables in accordance with the type of the photography device and the photography condition (see Fig. 29: As can be seen from the figure, the image process 73 means obtains information (i.e. the photography device type and the photography condition) from the image process condition determining means 75.).

With regard to claim 5, Ogura et al. discloses an image processing condition operating section to add, to change, and to delete said image processing condition in response to an operation (see column 16, lines 42-67: The reference describes that the image process condition determining means can comprise an irradiation field determining means or posture determining means at any given time. Therefore, a device is used to change, add, or delete one of these conditions.).

With regard to claim 6, Ogura et al. discloses an image display section to display the medical image subjected to the image processing by said image processing section (see column 18, line 45: The reference describes that the processed image can be displayed on a television monitor (i.e. image display section).).

With regard to claim 7, which is representative of claim 8, Ogura et al. discloses an interested area designating section to designate an area of interest on the medical image displayed in said image display section in response to an operation, wherein said image display section lowers a luminance of an area, excluding the area of interest designated by said interested area designating section, to display the medical image (see Fig. 32: From this figure it can be seen that a designated area of the medical image B1 has been displayed and that the luminance of an area excluding the area of interest B1 has been lowered as can be seen by area B2.).

With regard to claim 9, which is representative of claim 10, Ogura et al. discloses a part recognizing section to recognize positions of a plurality of parts appearing in the medical image, wherein said image processing section subjects the area of interest, designated by said interested area designating section, to the image processing in accordance with a respective one of the plurality of parts appearing in the area of interest, and being among the plurality of parts having positions thereof which are recognized by said part recognizing section (see column 17, lines 9-27: The reference describes that photograph portion determining means (i.e. parts recognizing means) that determines a part based on a comparison with template parts (i.e. a plurality of parts).).

With regard to claim 11, which is representative of claims 12 and 13, Ogura et al. discloses a scanning processing designating section to designate, in response to an operation, a scanning processing to set an area of interest on the medical image displayed in said image display section and to move the area of interest in a predetermined direction, wherein said image display section displays, in accordance with the scanning processing by said scanning processing designating section, the medical image in which the area of interest successively moves, and a luminance of an area, excluding the area of interest, is lowered (see column 16, lines 42-54: The reference describes a movable aperture stop (i.e. a scanning processing designating section) for determining an irradiated region B1 (i.e. designating a scanning processing of setting the area of interest on the medical image displayed in said image display section). This aperture stop can be moved to any region of interest that is desired.).

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Regarding claim 16, which merely calls for an image processing program storage medium in which a program for operating a computer system as an image processing apparatus as described in claim 2, Ogura et al. discloses such an image processing program storage medium since all of the image processing in Ogura et al. is performed by computer.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ogura et al. (U.S. Patent No. 6,502,984 B2) and Ogura (U.S. Patent No. 6,314,198 B1). The arguments as to the relevance of Ogura et al. in the rejection of claims 1-3 above are incorporated herein.

Claim 4 calls for the image processing section to subject the medical image obtained by the data obtaining section to a luminance correction processing using a dynamic range compression function in which the average density around the respective points of the medical image is used as the variable. Although Ogura et al. discloses a variety of image processing techniques such as gradation correction and frequency emphasis, the reference does not disclose the use of luminance correction processing. However, Ogura, in the same field of endeavor of image processing and the same problem solving area of radiation images discloses the use of luminance correction processing (see column 36, lines 20-30: The reference describes a luminance correction processing using a dynamic range compression processing function which uses the average density as a factor.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ogura et al. by adding the luminance correction processing as taught in Ogura because this type of processing allows the "optimum image processing for the radiographic, digital image without troubling the operator".

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Yanagita et al. (USPN 5,982,953)
- Takeo (USPN 5,533,142)

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Are cited because of their general applicability to the environment of the claimed invention and to the limitations recited in the claims

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (571) 272-7390. The examiner can normally be reached on 8:30am - 5:00pm M-F.

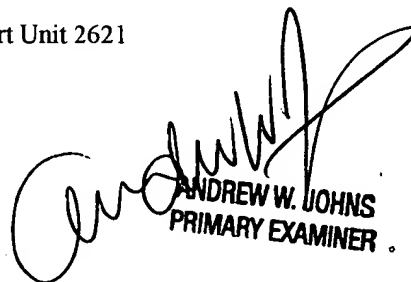
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joe Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick L Edwards

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ANDREW W. JOHNS
PRIMARY EXAMINER